Sheet 1, 2 Sheets.

S. Wallis.

Straight Knitting Mach.

No. 51,666. Patented Dec. 19, 1865.

Fig: 1.

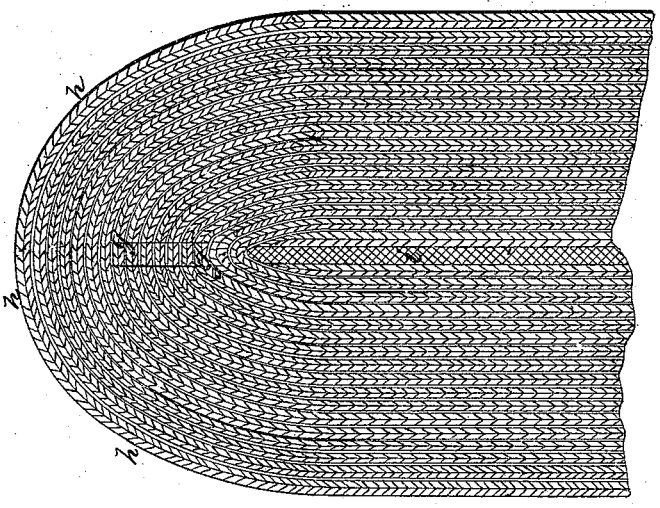
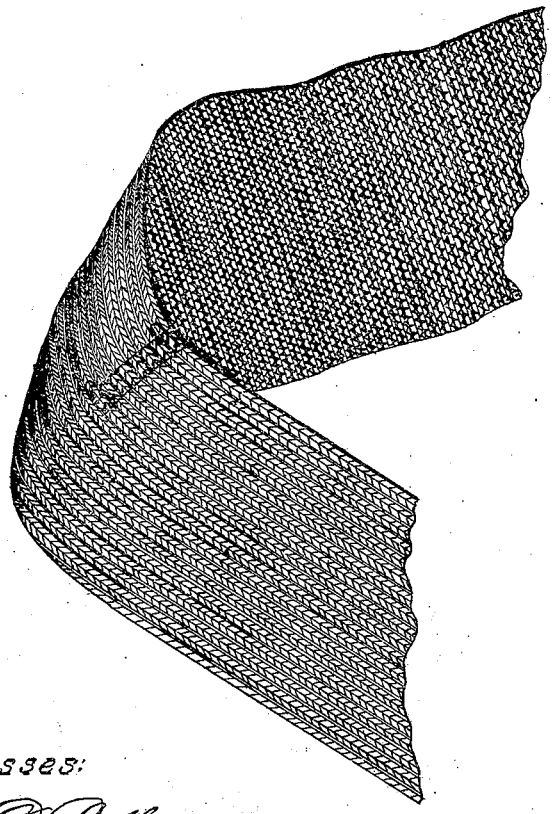


Fig: 2.



Witnesses:

Jno. D. Patten

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By atty, A. B. Stoughton.

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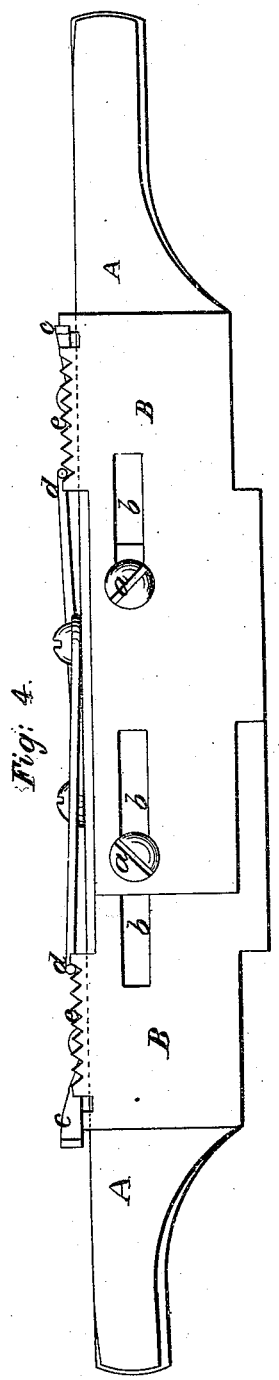

Fig: 4.

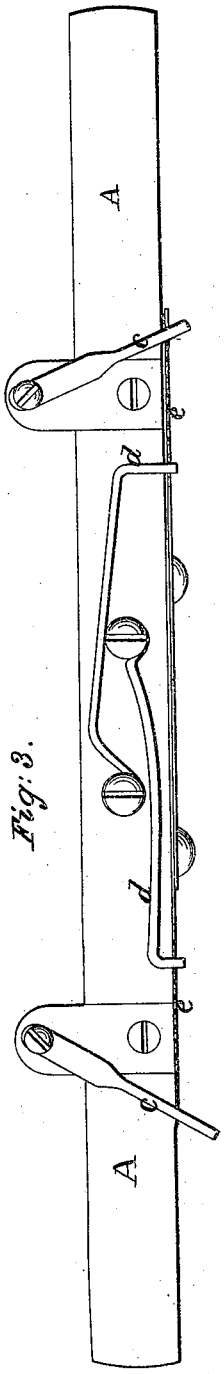

Fig: 3.

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UNITED STATES PATENT OFFICE.

SAMUEL WALLIS, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND JOHN PEPPER, OF SAME PLACE.

IMPROVEMENT IN KNITTING-MACHINES.

Specification forming part of Letters Patent No. **51,666**, dated December 19, 1865.

To all whom it may concern:

Be it known that I, SAMUEL WALLIS, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a certain new and useful Improvement in the Method of Forming the Toes of Stockings or the Ends of Mitts, or any other article that is to be narrowed or rounded off in knitting; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents the toe part of a stocking or the end of a mitt narrowed and rounded off by my plan. Fig. 2 represents the narrowing in the knitted fabric before it is sewed up into shape. Figs. 3 and 4 represent a top plan and side view of the apparatus by which the narrowing and widening is done.

My invention consists in narrowing or forming the toes of stockings or the ends of mitts, or any other knitted article needing to be narrowed in a similar way, on a flat or open frame, by means of a contractible and expansible presser, and without removing the loops from the needles; and this I do, by means of a contracting and extending presser, or any other equivalent device, by which means I am enabled to accomplish the object without what is known as the "ticklers" or narrowing-machine, and without seaming the toes and binding off, thereby producing a more substantial and better article, and in a much quicker way.

In the drawings, Figs. 3 and 4, I have shown a device by which the narrowing and widening may be done without removing the loops from the needles, viz: On the block or frame A are placed the two divisions or feet B B, they being held to the block and to each other by screws *a* passing through slots *b*, or otherwise, that will allow them to be contracted or extended, as may be required. On the top of block or frame are provided two arms, *c c*, one end of each of which sets in a notch in one of the divisions or feet B. Springs *d d* are so arranged as to catch into the teeth *e e*, respectively, of the two divisions, to hold them sufficiently firm for the purpose, but to yield when the arm *c* is moved to move its special foot. As these divisions B are moved in or contracted—say one needle every course—the needle that is not pressed goes out of action or discontinues to work, or, if in a sliding-needle machine, does not come forward but retains its loop, as it is not pressed by the apparatus, and so on until the article is narrowed sufficiently. Then, to widen on the opposite side, the presser is extended in the opposite direction, which laps one needle each notch that is moved out and brings the new lapped needle into knitting action, and so on until the full width is attained, and thus I make a very perfect, round, and smooth toe or end without taking the article off from the needles or moving a loop.

g in Fig. 1 shows where the narrowing and taking up again is done, and it also shows how perfectly round the toe or end *h* of the knitted article is made.

i is the seam where the knitted fabric is sewed.

In Fig. 2, *g* represents the narrowing in the fabric.

The contracting and extending presser, having some resemblance to what is commonly called a "tuck-presser," it may be proper to point out the difference between the presser I use and a "tuck-presser." The latter is for doubling up the thread or yarn upon the needle, to form what are commonly called "tucks" or fancy work. It is impossible to make tucks or fancy work with the extension-presser, which is simply a plain presser, in any of its forms or actions, whether it be extended or contracted, and presses every needle that it covers without tucking a single loop, which is not the case with a tuck-presser.

This presser may also be applied to the sliding-needle machine, to push forward at once all the needles wanted to form a course or row of stitches, the cam on the sliding bar in this case only driving them back one after another, and in this way narrowing or widening in the same way that it does in the hand or rotary stocking-frame.

Having thus fully described how my inven-

tion is carried out in practice, what I claim as new, and desire to secure by Letters Patent, is—

The narrowing or forming of the toes of stockings or the ends of mitts, in machine-knit goods, and on the flat or open frame, by means of a contractible and expansible presser, without moving the loops on the needles, and by throwing out or into action said needles, substantially as herein described.

SAMUEL WALLIS.

Witnesses:
JABEZ MANN,
JOSEPH FARLEY.